

ABSTRACT

This invention is related to a reactive nanoparticular cyclodextrin derivative useful as a porogen and a low dielectric matrix, with excellent mechanical properties and uniformly distributed nanopores, manufactured by sol-gel reaction of the above reactive cyclodextrin. Furthermore, this invention also is related to an ultralow dielectric film, with uniformly distributed nanopores, a relatively high porosity of 51%, and a relatively low dielectric constant of 1.6, manufactured by thin-filming of the conventional organic or inorganic silicate precursor by using the above reactive nanoparticular cyclodextrin derivative as a porogen.